

**TOSHIBA**

FILE NO. 050-200532

SERVICE MANUAL

# LCD Color Television

***23HLV85***



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## SERVICE SAFETY PRECAUTIONS

- The caution items shown here describe major safety issues and should always be observed.
- The meanings of the various indications are as follows.

 <b>WARNING</b>	Indicates a hypothetical situation in which service personnel and nearby third parties, or even end users due to a product defect after the service operation is completed, could possibly be in danger of injury or even death in the event of operational error.
 <b>CAUTION</b>	Indicates a hypothetical situation in which service personnel and nearby third parties, or even end users after the service operation is completed, could possibly be in danger of injury, or where there could be physical damage in the event of operational error.

\* Physical damage means major damage to a home, furnishings and other possessions.

### Examples of marks

 <b>SHOCK HAZARD</b>	The $\triangle$ indicates caution (including danger and warning). The actual meaning of this caution is indicated inside the $\triangle$ or nearby illustrations or text. The example shown to the left indicates the danger of "electrical shock".
 <b>PROHIBIT DISASSEMBLING</b>	The $\otimes$ indicates a forbidden action. The actual meaning of this caution is indicated inside the $\otimes$ or nearby illustrations or text. The example shown to the left indicates that disassembly is forbidden.
 <b>UNPLUG</b>	The $\bullet$ indicates a forced action (an action that must be performed). The actual meaning of this forced action is indicated by $\bullet$ or nearby illustrations or text. The example shown to the left indicates that the power plug must be disconnected.

	 <b>WARNING</b>
 <b>KEEP CHILDREN AWAY</b>	<ul style="list-style-type: none"> <li>Always advise users to keep children away. There is danger of injury to children from tools, disassembled products, etc.</li> </ul>
 <b>UNPLUG</b>	<ul style="list-style-type: none"> <li>Always disconnect the power plug before starting work whenever power is not required. Failure to disconnect the power plug before starting work can result in electrical shock.</li> </ul>
 <b>SHOCK HAZARD</b>	<ul style="list-style-type: none"> <li>Depending on the model, use an insulation transformer or wear gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.</li> </ul>
 <b>USE SPECIFIED PARTS</b>	<ul style="list-style-type: none"> <li>Always use the replacement parts specified for the particular model when making repairs. The parts used in products have the necessary safety characteristics such as inflammability, voltage resistance, etc.; therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the ⚠ mark is included in a circuit diagram or parts list.</li> </ul>
 <b>CAUTION FOR WIRING</b>	<ul style="list-style-type: none"> <li>Parts mounting and routing of the wiring should be the same as that used originally. For safety purposes, insulating materials such as tubing or tape is sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wiring is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the original scheme.</li> </ul>
 <b>CAUTION FOR ASSEMBLING / WIRING</b>	<ul style="list-style-type: none"> <li>After a repair has been completed, reassemble all disassembled parts, and route and reconnect the wiring, in accordance with the original scheme. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.</li> </ul>
 <b>CHECK INSULATION RESISTANCE</b>	<ul style="list-style-type: none"> <li>After completing the work, disconnect the power plug from the outlet, remove the antenna, turn on the power switch. Then, use a 500V insulation resistance meter to check the insulation resistance of the antenna terminal, other metallic parts and between the prongs of the power plug to make sure that the insulation resistance is 1M <math>\Omega</math> or more. The set will require inspection and repair if the insulation resistance is below this value.</li> </ul>
 <b>PROHIBIT REMODELING</b>	<ul style="list-style-type: none"> <li>Never remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous</li> </ul>

## HANDLING THE LCD MODULE

### Safety Precautions

In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid. Also, never touch this fluid.

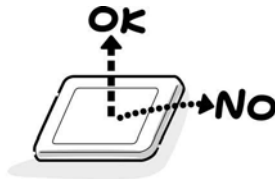
Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

### Precautions for Handling the LCD Module

**CAUTION** The metal edges of the LCD module are sharp, handle it with care.

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.



3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.

If the panel surface is extremely soiled, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.



4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.



5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.



6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.



8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.



9. Do not disassemble the LCD module. Such actions could result in improper operation.



10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



# 1.Service Mode

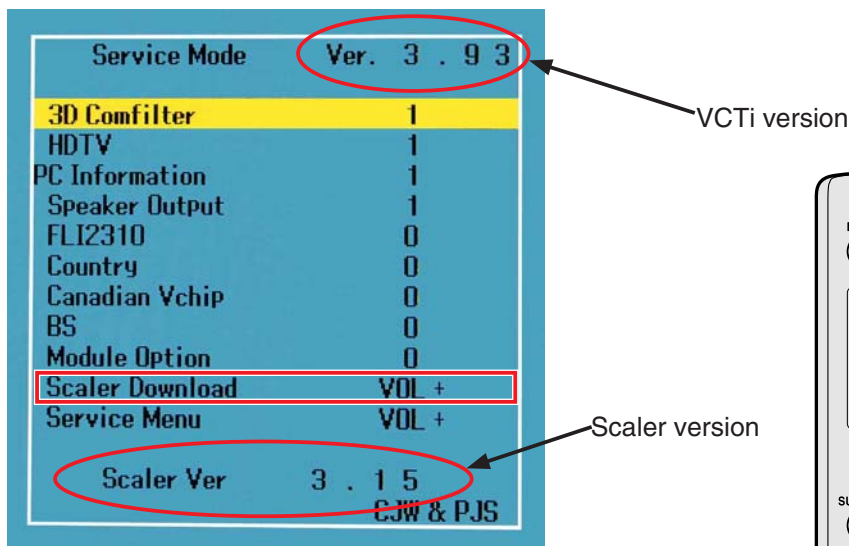
## 1-1.Starting Service Mode

\*Set LCD TV to the normal TV signal receive mode.

Note: In this "Service Mode" section, [ ] shows a button.

1-1-1. Press [MUTE] on the remote control once.

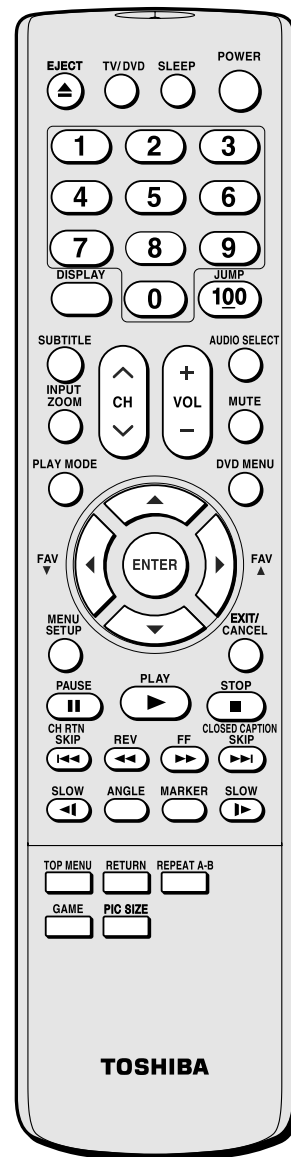
1-1-2. Press [MUTE] again, and press [↻] on LCD TV.



Service mode displayed on TV screen

Items other than those enclosed by  are default settings.

Item	Default setting
3D Comb Filter	1
HDTV	1
PC Information	1
Speaker Outout	0
FLI2310	1
Country	2
Canadian Vchip	0
BS	0
Module Option	0



## 2. Adjustment

Note: In this "Adjustment" section, [ ] shows a button.

### 2-1. Adjustment Tools and Conditions

Tools:        Pattern Generator (801GF, MSPG925F)  
               DDC Adjustment Tool  
               PC  
               Remote Control

Conditions: Heat Run 30 minutes or more

### 2-2. Auto Gain/Offset Adjustment

#### 2-2-1. RF Mode Adjustment (normal TV receive mode)

No required

#### 2-2-2. Component Mode Adjustment

Preparation

Carry out Heat Run for 30 minutes or more before adjustment (with no RF signal).

- 1) Connect Y, Pb, and Pr output signals of Pattern Generator to the component jack (Y, Pb, Pr) of LCD TV.
- 2) Connect Y, Pb, and Pr output signals of Pattern Generator to the component jack (D Jack) of LCD TV.
- 3) Change the TV input mode to component mode.
- 4) Select 480p Mode (Y:100% Pb/Pr:75%) in Pattern Generator. Select Pattern 33 (Color Bar Pattern signal) in Pattern Generator (MSPG925F).
- 5) Go into service mode, and Auto Gain menu appears, and then press VOL [+].
- 6) Press [OK] to store the adjustment data.



(Adjustment in component mode or PC mode)

#### 2-2-3. PC Mode Adjustment

Preparation

Carry out Heat Run for 30 minutes or more before adjustment (with no RF signal).

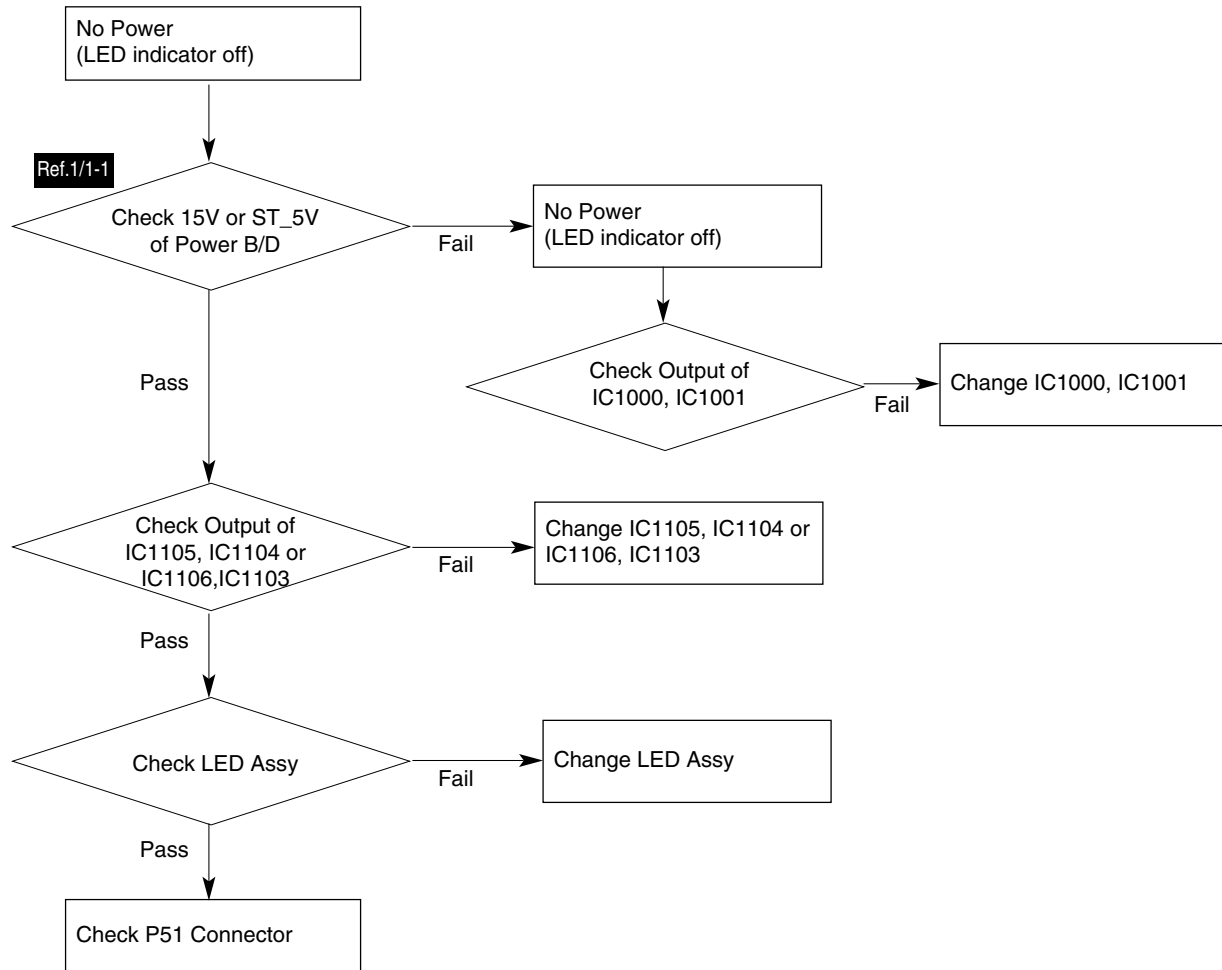
Connect Pattern Generator to the 15-pin D-Sub Jack of LCD TV.

- 1) Change the TV input mode to PC mode.
- 2) Set Pattern Generator to the following:  
XGA (1024x768) 16-step or 11-step grayscale
- 3) Go into service mode, and Auto Gain menu appears, and then press VOL [+].
- 4) Press [ENTER] to store the adjustment data.

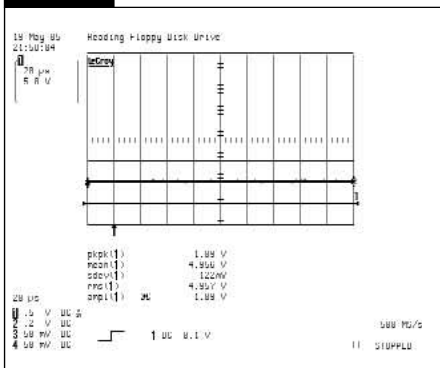


# 4. TROUBLESHOOTING

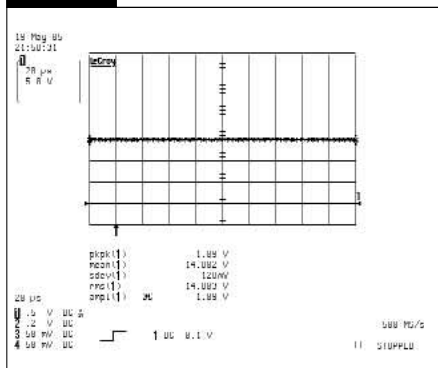
## Process A

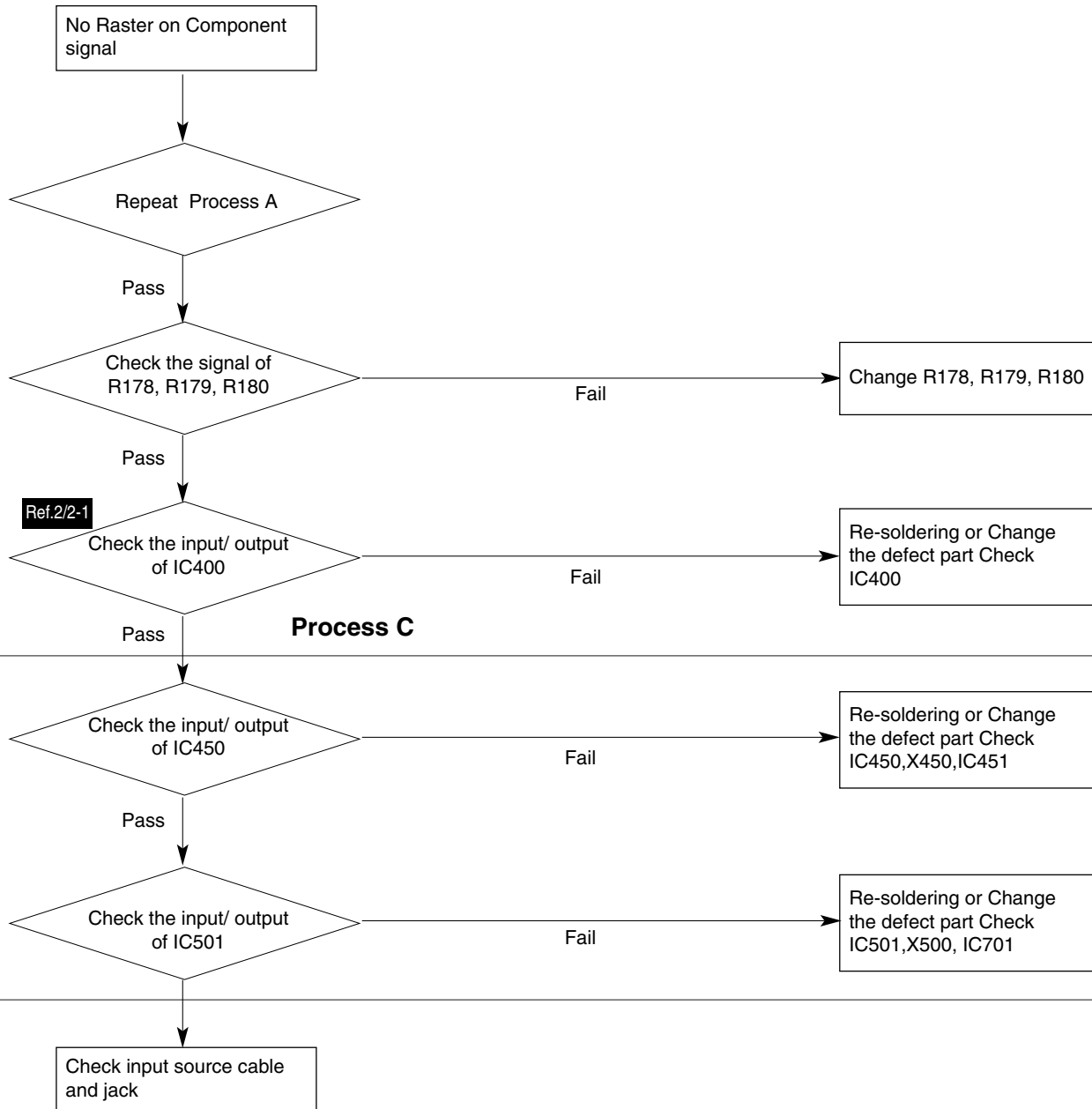


Ref.1 ST\_5V : P1000, #1



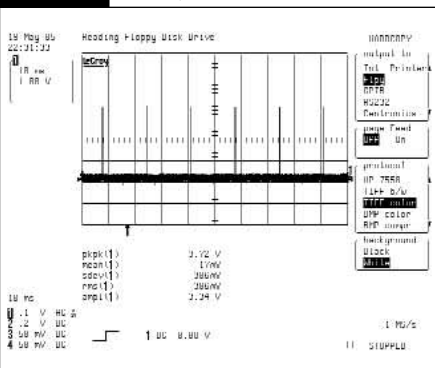
Ref.1-1 15V : P1000, #14, 15





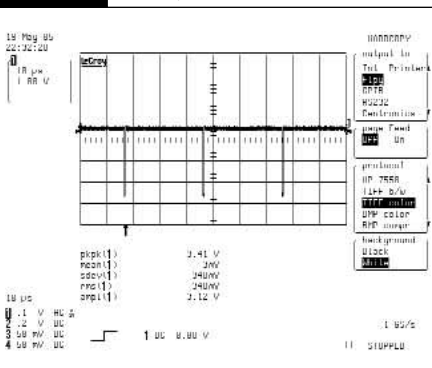
Ref.2

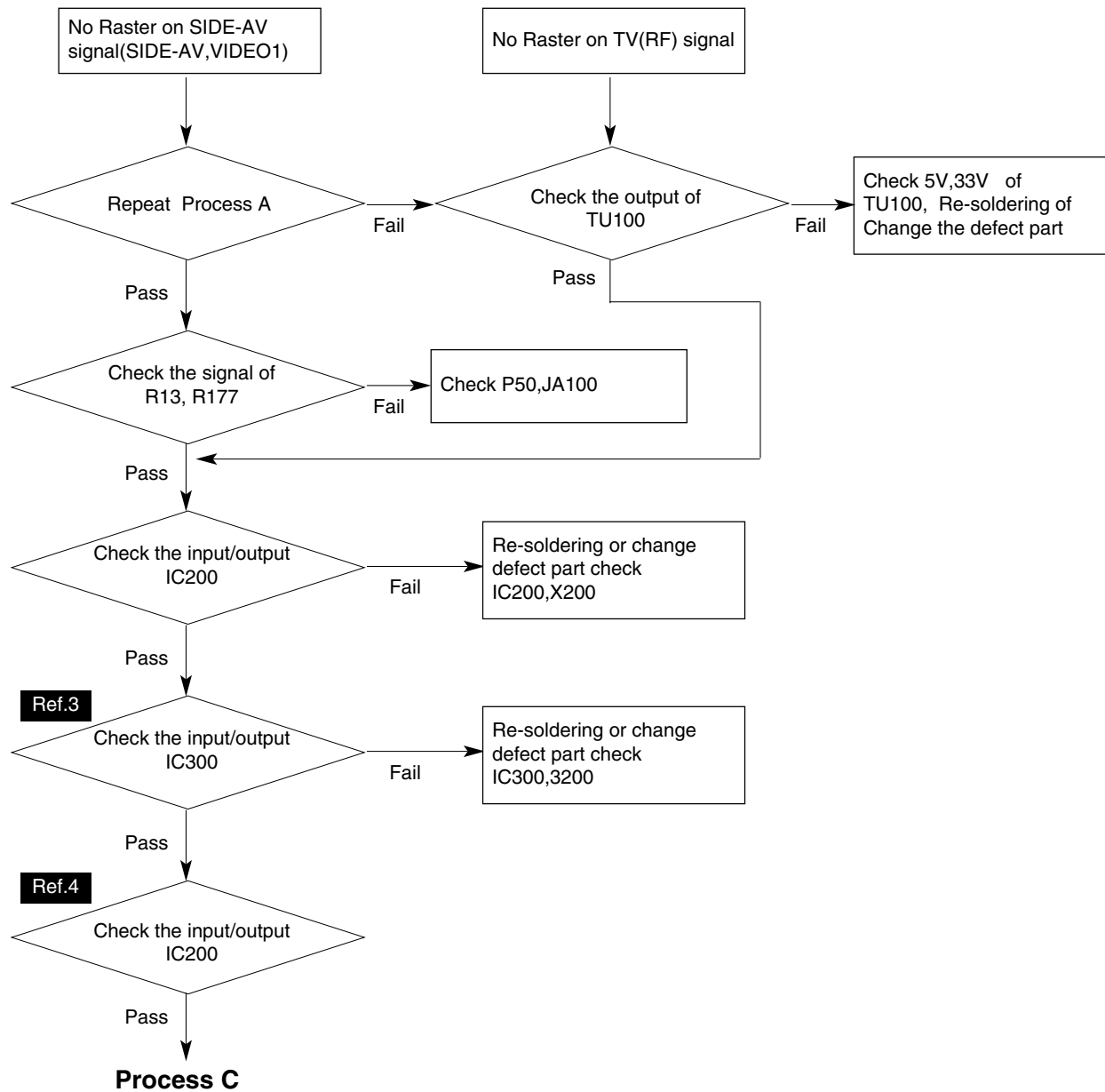
Component V signal Output :  
IC400, #64



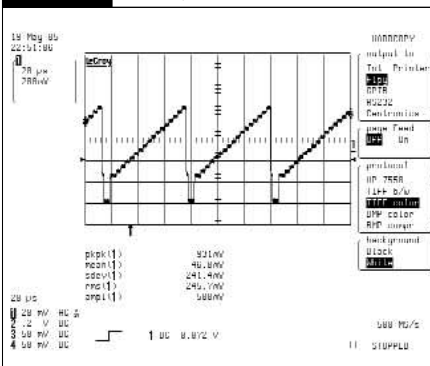
Ref.2-1

Component H signal Output :  
IC400, #66

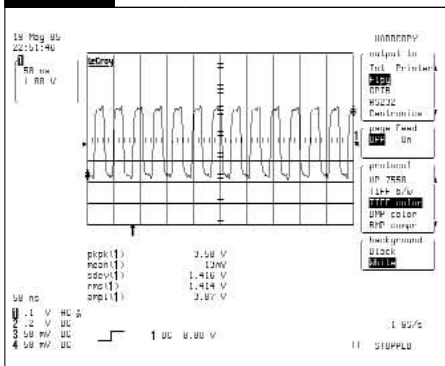


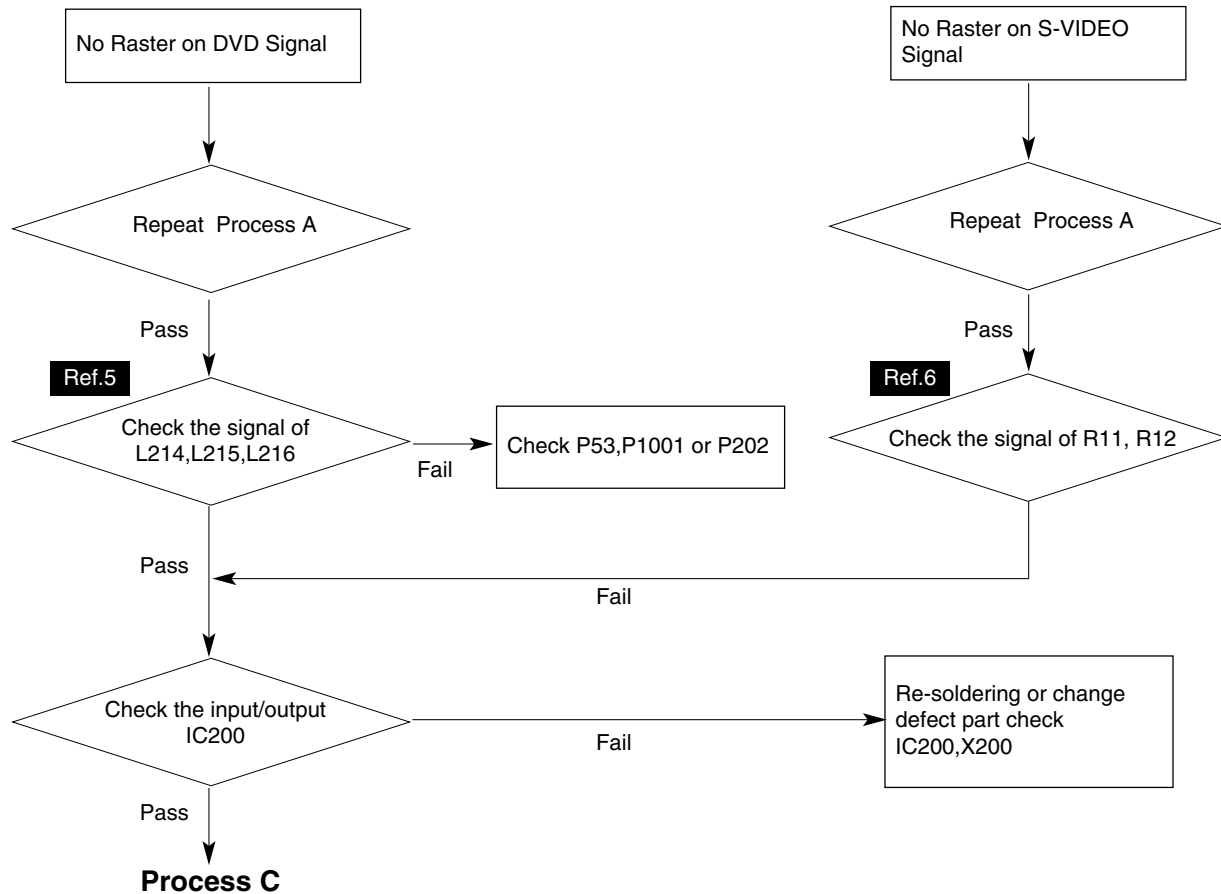


**Ref.3** Y separated output : IC300, #96

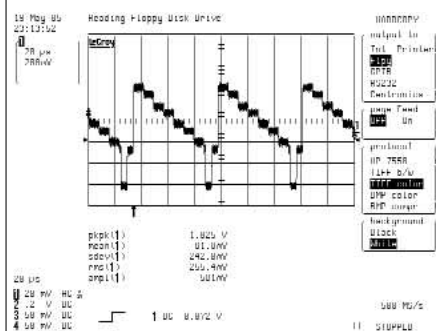


**Ref.4** ITU 656 Clock out : IC200, #83

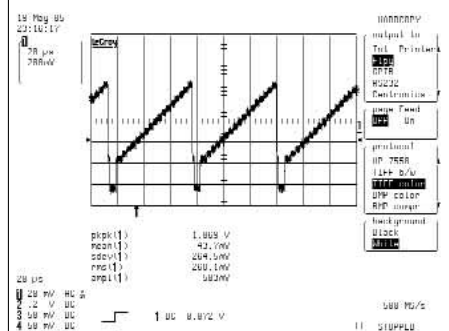


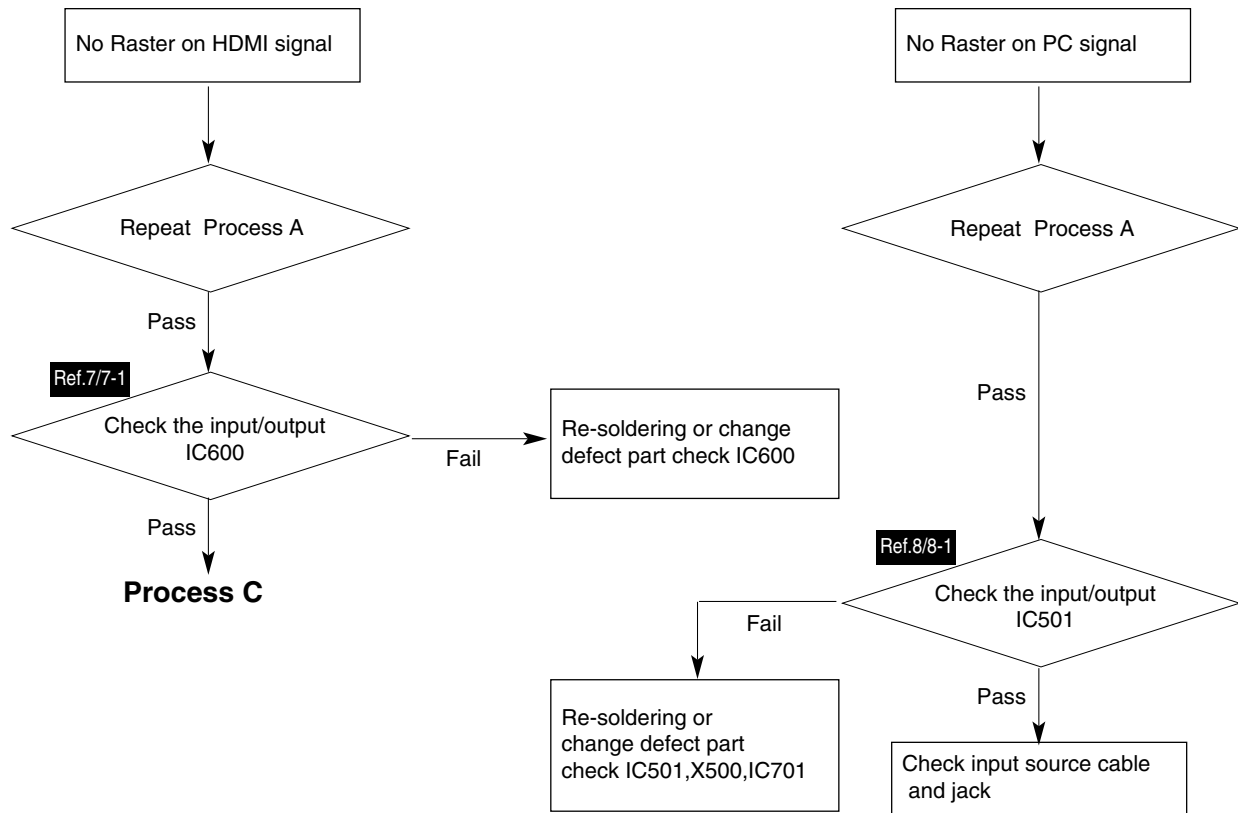


Ref.5 Y signal input : IC200, #68

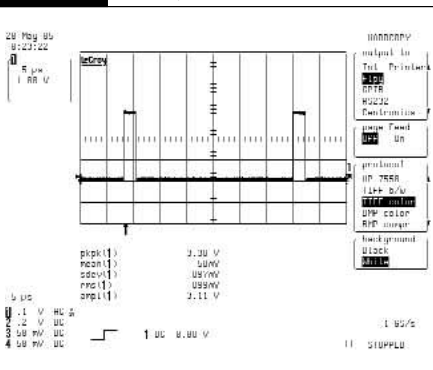


Ref.6 Y signal input : IC200, #62

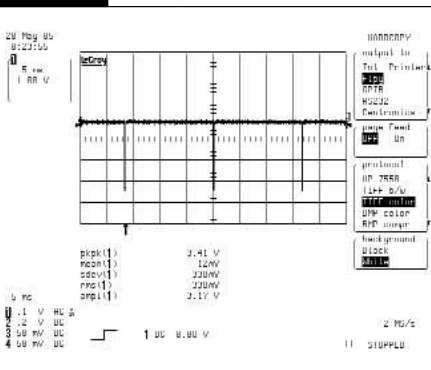




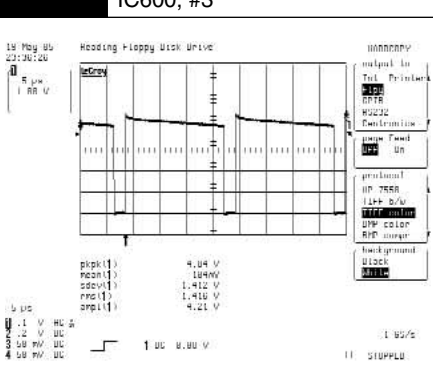
**Ref.7** HDMI H Signal output : IC600, #2



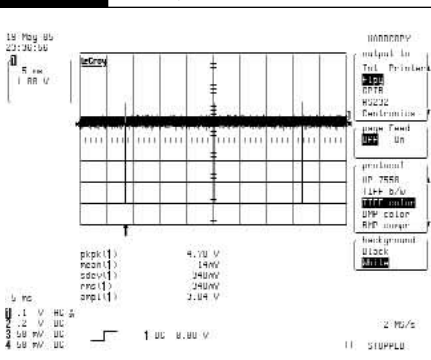
**Ref.7-1** PC H Signal Input : IC501, #181



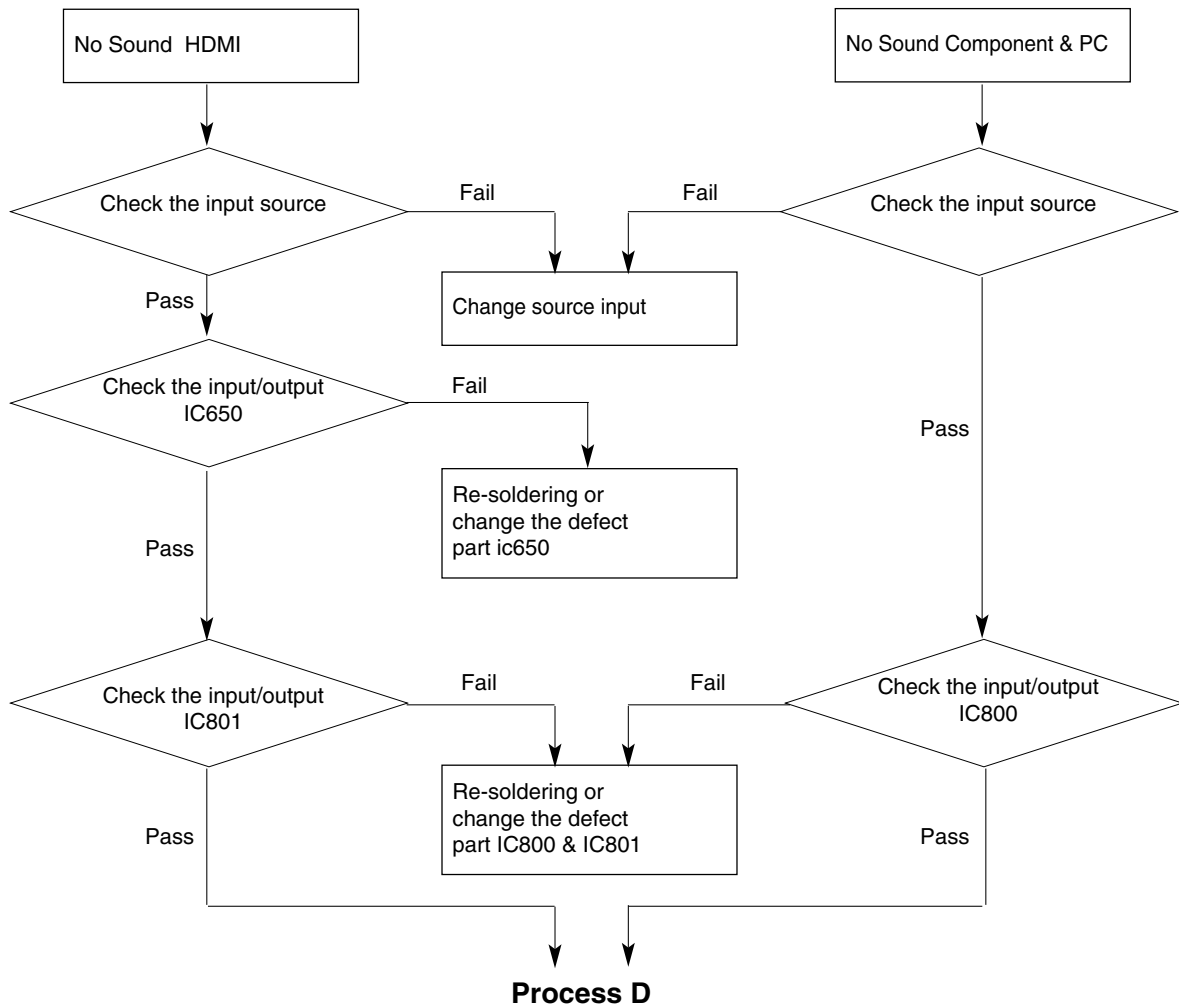
**Ref.8** HDMI V Signal output : IC600, #3



**Ref.8-1** PC V Signal input : IC501, #182

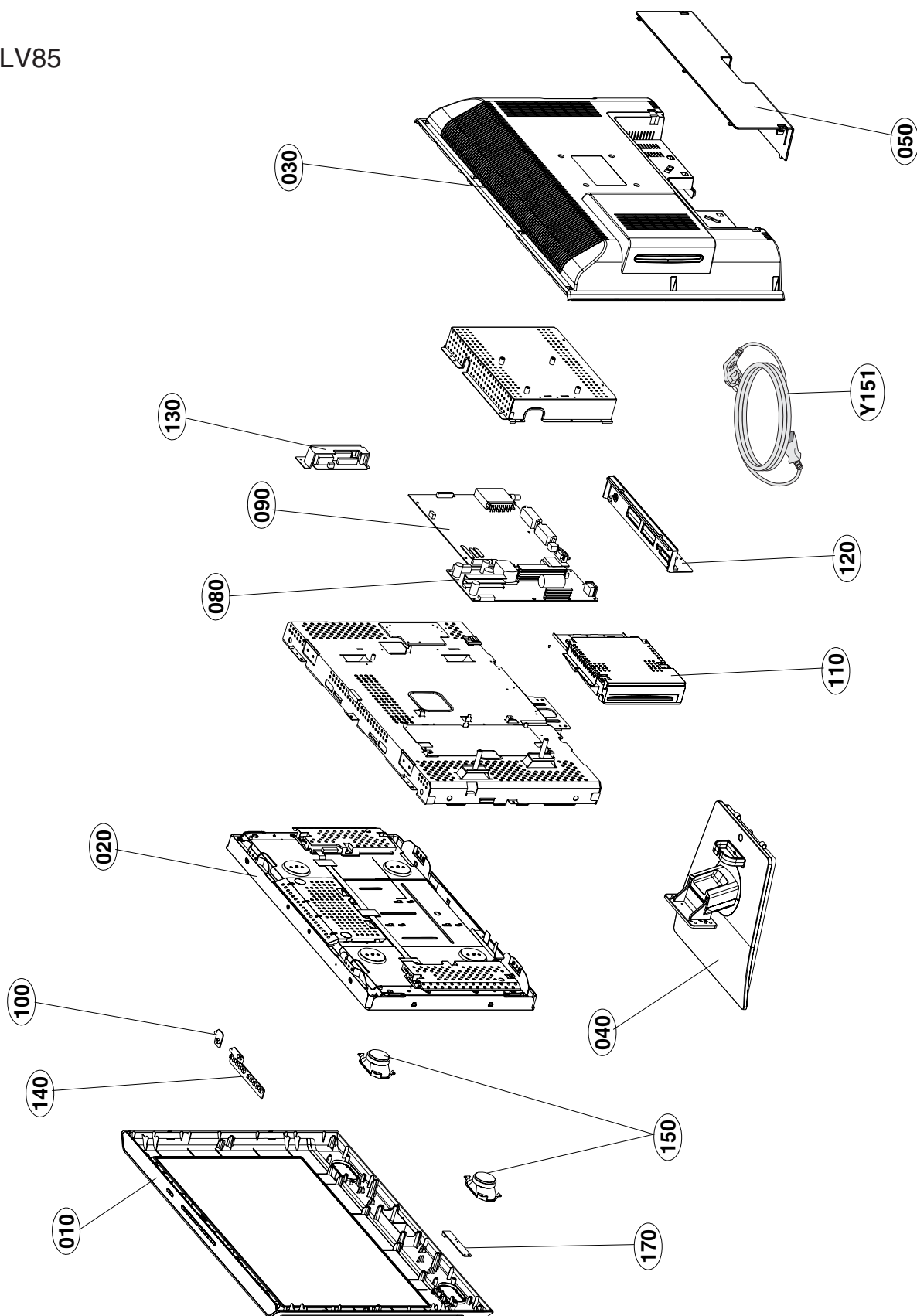






## 5. EXPLODED VIEWS


23HLV85





## 6. CHASSIS AND CABINET REPLACEMENT PARTS LIST

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE "SERVICE SAFETY PRECAUTIONS" ON PAGE 3 OF THIS MANUAL.

**CAUTION:** The international hazard symbols "" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SERVICE SAFETY PRECAUTIONS. Do not degrade the safety of the receiver through improper servicing.

**NOTICE:**

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with \* mark is no longer available after the end of the production.

**Model : 23HLV85**

Capacitors ..... CD : Ceramic Disk      PF : Plastic Film      EL : Electrolytic  
Resistors ..... CF : Carbon Film      CC : Carbon Composition      MF : Metal Film  
                         OMF : Oxide Metal Film      VR : Variable Resistor      FR : Fusible Resistor  
(All CD and PF capacitors are  $\pm 5\%$ , 50V and all resistors,  $\pm 5\%$ , 1/6W unless otherwise noted.)

Location No.	Parts No.	Reference	Description
<b>CAPACITORS</b>			
C20	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C23	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C24	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C51	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C52	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C53	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C76	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C77	72796127	0CC150CK41A	CERAMIC, 15PF 1608 50V 5% R/T
C80	72795161	0CH6331K416	CERAMIC CHIP, 330PF 50V J NP0 2012
C81	72795161	0CH6331K416	CERAMIC CHIP, 330PF 50V J NP0 2012
C82	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C83	72795197	0CE476WF6DC	ELECTROLYTIC, 47UF MVK 16V 20% R/T
C84	72781845	0CH6030K116	CERAMIC, 3PF 2012 50V 0.5 PF
C85	72781845	0CH6030K116	CERAMIC, 3PF 2012 50V 0.5 PF
C100	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C101	72796122	0CE107EK638	ELECTROLYTIC, 100UF KMG 50V M FM5
C102	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C103	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C104	72795176	0CK103CK51A	CERAMIC, 0.01UF 1608 50V 10%
C105	72795185	0CK273DK51A	CERAMIC, 27000PF 2012 50V 10%
C106	72795169	0CC390DK41A	CERAMIC, 39PF 2012 50V 5% NP0
C108	72795146	0CE108EF618	ELECTROLYTIC, 1000UF KMG 16V 20% F
C109	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C110	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C111	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C150	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C173	72795168	0CC331CK41A	CERAMIC, 330PF 1608 50V 5% R/
C175	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C200	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C201	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C202	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C205	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C206	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C207	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C208	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C209	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C212	72795196	0CE475WJ6DC	ELECTROLYTIC, 4.7UF MVK 35V 20% R/
C213	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C215	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C216	72796130	0CC390CK41A	CERAMIC, 39PF 1608 50V 5% R/T
C218	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C221	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C222	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD

Location No.	Parts No.	Reference	Description
C223	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C224	72795173	0CH3822K516	CERAMIC, 8200PF 2012 50V 10%
C226	72795186	0CK334CF94A	CERAMIC, 0.33UF 1608 16V 80%,
C229	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C230	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C231	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C232	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C233	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C234	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C235	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C236	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C237	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C240	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C241	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C242	72795186	0CK334CF94A	CERAMIC, 0.33UF 1608 16V 80%,
C245	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C246	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C247	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C248	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C250	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C251	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C252	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C253	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C254	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C255	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C256	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C257	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C258	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C259	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C260	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C261	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C262	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C263	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C264	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C265	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C266	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C268	72796128	0CC220CK41A	CERAMIC, 22PF 1608 50V 5% R/T
C270	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C271	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C272	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C273	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C275	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C276	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C278	72795176	0CK103CK51A	CERAMIC, 0.01UF 1608 50V 10%
C279	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C280	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C282	72795164	0CC221CK41A	CERAMIC, 220PF 1608 50V 5% R/
C288	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C300	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C302	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C303	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C305	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C307	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C308	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C309	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C311	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C312	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C313	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C314	72795178	0CK105CF94A	CERAMIC, 1UF 1608 16V 80%, -20
C316	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C317	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C318	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C319	72795176	0CK103CK51A	CERAMIC, 0.01UF 1608 50V 10%
C320	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C321	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C322	72796133	0CK152CK51A	CERAMIC, 1500PF 1608 50V 10%
C323	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C324	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C325	72796129	0CC270CK41A	CERAMIC, 27PF 1608 50V 5% R/T
C326	72796131	0CC820CK41A	CERAMIC, 82PF 1608 50V 5% NP0
C327	72795168	0CC331CK41A	CERAMIC, 330PF 1608 50V 5% R/
C328	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7

Location No.	Parts No.	Reference	Description
C329	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C333	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C334	72795187	0CK474CH94A	CERAMIC, 0.47UF 1608 25V 80%,
C335	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C336	72795167	0CC330CK41A	CERAMIC, 33PF 1608 50V 5% R/T
C337	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C339	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C341	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C342	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C343	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C344	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C346	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C348	72796137	0CE226WF6DC	ELECTROLYTIC, 22UF MVK 16V 20% R/T
C349	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C350	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C351	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C352	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C353	72795178	0CK105CF94A	CERAMIC, 1UF 1608 16V 80%, -20
C354	72795170	0CC471CK41A	CERAMIC, 470PF 1608 50V 5% R/
C355	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C402	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C404	72796128	0CC220CK41A	CERAMIC, 22PF 1608 50V 5% R/T
C405	72795160	0CH6220K416	CERAMIC, 22PF 2012 50V 5% NP0
C407	72796128	0CC220CK41A	CERAMIC, 22PF 1608 50V 5% R/T
C408	72796134	0CK473CK56A	CERAMIC, 47000PF 1608 50V 10%
C410	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C411	72796134	0CK473CK56A	CERAMIC, 47000PF 1608 50V 10%
C412	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C417	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C418	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C421	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C422	72796136	0CK823CK56A	CERAMIC, 82NF 1608 50V 10% R/
C423	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C424	72795173	0CH3822K516	CERAMIC, 8200PF 2012 50V 10%
C427	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C436	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C442	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C454	72796126	0CH6330K416	CERAMIC CHIP, 33PF 50V J NP0 2012
C456	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C460	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C461	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C462	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C463	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C464	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C484	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C486	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C495	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C496	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C501	72795161	0CH6331K416	CERAMIC CHIP, 330PF 50V J NP0 2012
C502	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C506	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C510	72795176	0CK103CK51A	CERAMIC, 0.01UF 1608 50V 10%
C517	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C520	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C530	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C532	72795153	0CH6080K116	CERAMIC, 8PF 2012 50V 0.5 PF
C534	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C553	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C554	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C602	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C604	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C609	72796125	0CH6050K116	CERAMIC, 5PF 2012 50V 10% NP0
C610	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C611	72796125	0CH6050K116	CERAMIC, 5PF 2012 50V 10% NP0
C612	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C639	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C640	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C647	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C648	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C650	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C651	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C653	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD

Location No.	Parts No.	Reference	Description
C654	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C658	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C659	72796128	0CC220CK41A	CERAMIC, 22PF 1608 50V 5% R/T
C662	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C670	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C671	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C673	72795197	0CE476WF6DC	ELECTROLYTIC, 47UF MVK 16V 20% R/T
C674	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C676	72795197	0CE476WF6DC	ELECTROLYTIC, 47UF MVK 16V 20% R/T
C678	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C679	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C680	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C681	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C712	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C713	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C714	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C715	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C716	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C717	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C718	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C719	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C720	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C721	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C722	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C723	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C724	72795157	0CH6471K416	CERAMIC CHIP, 470F 50V J NP0 2012
C729	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C731	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C733	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C750	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C755	72795154	0CH6101K416	CERAMIC, 100PF 50V 5% NP0 201
C757	72795157	0CH6471K416	CERAMIC CHIP, 470F 50V J NP0 2012
C759	72795154	0CH6101K416	CERAMIC, 100PF 50V 5% NP0 201
C760	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C761	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C762	72795161	0CH6331K416	CERAMIC CHIP, 330PF 50V J NP0 2012
C763	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C764	72795194	0CE226WJ6DC	ELECTROLYTIC, 22UF MVK 35V 20% R/T
C800	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C801	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C802	72795196	0CE475WJ6DC	ELECTROLYTIC, 4.7UF MVK 35V 20% R/
C806	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C807	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C808	72795196	0CE475WJ6DC	ELECTROLYTIC, 4.7UF MVK 35V 20% R/
C810	72795196	0CE475WJ6DC	ELECTROLYTIC, 4.7UF MVK 35V 20% R/
C812	72795148	0CH8106F691	ELECTROLYTIC, 10UF 16V 20% 105STD
C813	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C900	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C905	72795182	0CK224CF56A	CERAMIC, 0.22UF 1608 16V 10%
C906	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C907	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C908	72795182	0CK224CF56A	CERAMIC, 0.22UF 1608 16V 10%
C909	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C910	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C911	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C912	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C914	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C915	72795182	0CK224CF56A	CERAMIC, 0.22UF 1608 16V 10%
C916	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C917	72795171	0CH3103K516	CERAMIC, 10000PF 50V 10% B(Y5
C918	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C919	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C920	72795182	0CK224CF56A	CERAMIC, 0.22UF 1608 16V 10%
C921	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C922	72795164	0CC221CK41A	CERAMIC, 220PF 1608 50V 5% R/
C923	72795179	0CK105DK94A	CERAMIC, 1UF 2012 50V 80%, -20
C924	72796135	0CK474DH56A	CERAMIC, 0.47UF 2012 25V 10%
C930	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C931	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C932	72795199	0CH8106J691	ELECTROLYTIC, 10UF 35V 20% 105STD
C933	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C934	72795196	0CE475WJ6DC	ELECTROLYTIC, 4.7UF MVK 35V 20% R/

Location No.	Parts No.	Reference	Description
C938	72795187	0CK474CH94A	CERAMIC, 0.47UF 1608 25V 80%,
C950	72795175	0CK102CK56A	CERAMIC, 1000PF 1608 50V 0.1
C952	72795194	0CE226WJ6DC	ELECTROLYTIC, 22UF MVK 35V 20% R/T
C1000	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1001	72795197	0CE476WF6DC	ELECTROLYTIC, 47UF MVK 16V 20% R/T
C1002	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1003	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1004	72796123	0CE477EH618	ELECTROLYTIC, 470UF KMG 25V M FL T
C1005	72796122	0CE107EK638	ELECTROLYTIC, 100UF KMG 50V M FM5
C1006	72795146	0CE108EF618	ELECTROLYTIC, 1000UF KMG 16V 20% F
C1007	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1008	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1009	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C1010	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1011	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1100	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1102	72795157	0CH6471K416	CERAMIC CHIP, 470F 50V J NP0 2012
C1103	72795157	0CH6471K416	CERAMIC CHIP, 470F 50V J NP0 2012
C1104	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C1108	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C1109	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1110	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C1111	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1112	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C1113	72795172	0CH3104K566	CERAMIC, 0.1UF 50V 10% X7R 20
C1115	72796123	0CE477EH618	ELECTROLYTIC, 470UF KMG 25V M FL T
C1116	72796135	0CK474DH56A	CERAMIC, 0.47UF 2012 25V 10%
C1119	72795176	0CK103CK51A	CERAMIC, 0.01UF 1608 50V 10%
C1125	72796124	0CH3222K516	CERAMIC, 2200PF 2012 50V 10%
C1126	72795151	0CH3332K516	CERAMIC CHIP, 3300PF 50V K B 2012
C1131	72795184	0CK226FF67A	CERAMIC, 22UF 3225 16V 20% X5
C1134	72795146	0CE108EF618	ELECTROLYTIC, 1000UF KMG 16V 20% F
C1137	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1140	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1141	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1142	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C1143	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1144	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C1147	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1148	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C1151	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1152	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1159	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1160	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1161	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1164	72795183	0CK225DH94A	CERAMIC, 2.2UF 2012 25V 80%, -
C1167	72795155	0CH6102K406	CERAMIC CHIP, 1000PF 50V J SL 2012
C1169	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C1170	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C1171	72795192	0CE107WH6DC	ELECTROLYTIC, 100UF MVK 25V 20% R/
C1172	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
C1173	72796132	0CK102DK51A	CERAMIC, 1000PF 2012 50V 10%
C1174	72795191	0CE107WF6DC	ELECTROLYTIC, 100UF MVK 16V 20% R/
C1175	72796132	0CK102DK51A	CERAMIC, 1000PF 2012 50V 10%
C1176	72795146	0CE108EF618	ELECTROLYTIC, 1000UF KMG 16V 20% F
C1300	72795188	0CK475DD57A	CERAMIC, 4.7UF 2012 10V 10% X
C1500	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
C1502	72795157	0CH6471K416	CERAMIC CHIP, 470F 50V J NP0 2012
C2000	72795177	0CK104CK56A	CERAMIC, 0.1UF 1608 50V 10% R
<b>RESISTORS</b>			
R02	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R10	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R11	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R12	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R16	72795387	0RJ1501D677	METAL GLAZE, 1.5K OHM 1/10 W 5% 1
R20	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R21	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R22	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R23	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R24	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R26	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160

Location No.	Parts No.	Reference	Description
R27	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R28	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160
R33	72795395	0RJ4703D677	METAL GLAZE, 470K OHM 1/10 W 5% 1
R34	72795395	0RJ4703D677	METAL GLAZE, 470K OHM 1/10 W 5% 1
R35	72796215	0RJ1802D677	METAL GLAZE, 18K OHM 1/10 W 5% 16
R37	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160
R38	72795392	0RJ3301D677	METAL GLAZE, 3.3K OHM 1/10 W 5% 1
R39	72795388	0RJ2001D677	METAL GLAZE, 2K OHM 1/10 W 5% 160
R40	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R58	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R61	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R62	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R63	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R64	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R67	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160
R68	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160
R71	72796205	0RH1002D422	METAL GLAZE, 10K OHM 1/10 W 1% 20
R72	72796205	0RH1002D422	METAL GLAZE, 10K OHM 1/10 W 1% 20
R73	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R74	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R75	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R78	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R85	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R86	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R87	72796212	0RJ1003D677	METAL GLAZE, 100K OHM 1/10 W 5% 1
R88	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R90	72795334	0RH0472D622	METAL GLAZE, 47 OHM 1 / 10 W 2012
R91	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R92	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R93	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R94	72796212	0RJ1003D677	METAL GLAZE, 100K OHM 1/10 W 5% 1
R96	72795386	0RJ1500D677	METAL GLAZE, 150 OHM 1/10 W 5% 16
R98	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R100	72795401	0RH0562D622	CHIP, 56 1/10W 5 D.R/TP
R101	72795354	0RH8200D622	METAL GLAZE, 820 OHM 1 / 10 W 201
R102	72795368	0RH1501D622	METAL GLAZE, 1.5K OHM 1 / 10 W 20
R103	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R104	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R105	72795337	0RH2001D622	CHIP, 2.0K 1/10W 5 D.R/TP
R106	72796194	0RH0332D622	CHIP, 33 1/10W 5 D.R/TP
R107	72795338	0RH2200D622	METAL GLAZE, 220 OHM 1 / 10 W 201
R108	72795367	0RH1202D622	METAL GLAZE, 12K OHM 1 / 10 W 201
R109	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R110	72795353	0RH7502D622	METAL GLAZE, 75K OHM 1 / 10 W 201
R111	72795391	0RJ2701D677	METAL GLAZE, 2.7K OHM 1/10 W 5% 1
R112	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R113	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R114	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R151	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R152	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R153	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R155	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R157	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R166	72796204	0RH0102D622	METAL GLAZE, 10 OHM 1 / 10 W 2012
R167	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R171	72795388	0RJ2001D677	METAL GLAZE, 2K OHM 1/10 W 5% 160
R172	72795387	0RJ1501D677	METAL GLAZE, 1.5K OHM 1/10 W 5% 1
R173	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R181	72796211	0RJ1001D477	METAL GLAZE, 1K OHM 1/10 W 1% 160
R182	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R185	72795395	0RJ4703D677	METAL GLAZE, 470K OHM 1/10 W 5% 1
R187	72795396	0RJ5101D677	METAL GLAZE, 5.1K OHM 1/10 W 5% 1
R191	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R200	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R201	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R202	72795341	0RH3301D622	METAL GLAZE, 3.3K OHM 1 / 10 W 20
R204	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R205	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R209	72795341	0RH3301D622	METAL GLAZE, 3.3K OHM 1 / 10 W 20
R210	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R211	72795385	0RJ1211D477	METAL GLAZE, 1.21K OHM 1/10 W 1%
R212	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16

Location No.	Parts No.	Reference	Description
R220	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R230	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R233	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R234	72796217	0RJ4700D677	METAL GLAZE, 470 OHM 1/10 W 5% 16
R235	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R236	72795336	0RH1500D622	METAL GLAZE, 150 OHM 1 / 10 W 201
R237	72796206	0RH2202D622	METAL GLAZE, 22K OHM 1 / 10 W 201
R238	72795336	0RH1500D622	METAL GLAZE, 150 OHM 1 / 10 W 201
R239	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R240	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R241	72796217	0RJ4700D677	METAL GLAZE, 470 OHM 1/10 W 5% 16
R242	72795336	0RH1500D622	METAL GLAZE, 150 OHM 1 / 10 W 201
R244	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R255	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R260	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R263	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R301	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R302	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R305	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R306	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R307	72796217	0RJ4700D677	METAL GLAZE, 470 OHM 1/10 W 5% 16
R309	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R310	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R311	72796217	0RJ4700D677	METAL GLAZE, 470 OHM 1/10 W 5% 16
R312	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R313	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R314	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R315	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R316	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R317	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R318	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R320	72795379	0RJ0822D677	METAL GLAZE, 82 OHM 1/10 W 5% 160
R322	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R323	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R324	72796216	0RJ3602D677	METAL GLAZE, 36K OHM 1/10 W 5% 16
R326	72796213	0RJ1004D677	METAL GLAZE, 1000000 OHM 1/10 W 5
R327	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R328	72796212	0RJ1003D677	METAL GLAZE, 100K OHM 1/10 W 5% 1
R329	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R330	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R331	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R332	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R333	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R334	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R335	72795379	0RJ0822D677	METAL GLAZE, 82 OHM 1/10 W 5% 160
R336	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R400	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R404	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R406	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R407	72795391	0RJ2701D677	METAL GLAZE, 2.7K OHM 1/10 W 5% 1
R408	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R450	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R455	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R457	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R466	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R467	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R468	72795366	0RH1004D622	METAL GLAZE, 1M OHM 1 / 10 W 2012
R469	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R470	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R471	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R473	72796214	0RJ1800D677	METAL GLAZE, 180 OHM 1/10 W 5% 16
R474	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R475	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R476	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R477	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R478	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R479	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R480	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R481	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R484	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160
R500	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R502	72795338	0RH2200D622	METAL GLAZE, 220 OHM 1 / 10 W 201

Location No.	Parts No.	Reference	Description
R503	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R506	72795376	0RJ0472D677	METAL GLAZE, 47 OHM 1/10 W 5% 160
R507	72795379	0RJ0822D677	METAL GLAZE, 82 OHM 1/10 W 5% 160
R508	72795376	0RJ0472D677	METAL GLAZE, 47 OHM 1/10 W 5% 160
R509	72795379	0RJ0822D677	METAL GLAZE, 82 OHM 1/10 W 5% 160
R510	72795376	0RJ0472D677	METAL GLAZE, 47 OHM 1/10 W 5% 160
R511	72795379	0RJ0822D677	METAL GLAZE, 82 OHM 1/10 W 5% 160
R513	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R518	72796218	0RJ4990D477	METAL GLAZE, 499 OHM 1/10 W 1% 16
R520	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R527	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R529	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R535	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R536	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R537	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R541	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R550	72795341	0RH3301D622	METAL GLAZE, 3.3K OHM 1 / 10 W 20
R552	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R554	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R561	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R600	72795366	0RH1004D622	METAL GLAZE, 1M OHM 1 / 10 W 2012
R601	72796210	0RJ0332D677	METAL GLAZE, 33 OHM 1/10 W 5% 160
R602	72795378	0RJ0752D677	METAL GLAZE, 75 OHM 1/10 W 5% 160
R604	72796210	0RJ0332D677	METAL GLAZE, 33 OHM 1/10 W 5% 160
R610	72796210	0RJ0332D677	METAL GLAZE, 33 OHM 1/10 W 5% 160
R613	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R615	72796210	0RJ0332D677	METAL GLAZE, 33 OHM 1/10 W 5% 160
R617	72795340	0RH3000D622	METAL GLAZE, 300 OHM 1 / 10 W 201
R618	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R620	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R670	72796194	0RH0332D622	CHIP, 33 1/10W 5 D.R/TP
R671	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R673	72796207	0RH2203D622	METAL GLAZE, 220K OHM 1 / 10 W 20
R675	72781916	0RH2201D622	METAL GLAZE, 2.2K OHM 1 / 10 W 20
R677	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R679	72795334	0RH0472D622	METAL GLAZE, 47 OHM 1 / 10 W 2012
R700	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R703	72795347	0RH4703D622	METAL GLAZE, 470K OHM 1 / 10 W 20
R705	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R706	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R707	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R709	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R710	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R713	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R721	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R722	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R724	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R725	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R726	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R727	72796209	0RH6802D622	METAL GLAZE, 68K OHM 1 / 10 W 201
R730	72795337	0RH2001D622	CHIP, 2.0K 1/10W 5 D.R/TP
R732	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R750	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R760	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R766	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R767	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R770	72795347	0RH4703D622	METAL GLAZE, 470K OHM 1 / 10 W 20
R772	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R778	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R780	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R782	72796208	0RH3901D622	METAL GLAZE, 3.9K OHM 1 / 10 W 20
R786	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R800	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R801	72795346	0RH4702D622	METAL GLAZE, 47K OHM 1 / 10 W 201
R802	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R803	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R805	72795360	0RH0222D622	METAL GLAZE, 22 OHM 1 / 10 W 2012
R807	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R808	72795346	0RH4702D622	METAL GLAZE, 47K OHM 1 / 10 W 201
R809	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R810	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R812	72795375	0RJ0222D677	METAL GLAZE, 22 OHM 1/10 W 5% 160



Location No.	Parts No.	Reference	Description
R903	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R904	72795469	0RJ1203D677	METAL GLAZE, 120K OHM 1/10 W 5% 1
R907	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R908	72795469	0RJ1203D677	METAL GLAZE, 120K OHM 1/10 W 5% 1
R909	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R910	72781914	0RJ4702D677	METAL GLAZE, 47000 OHM 1/10 W 5%
R911	72795394	0RJ4701D677	METAL GLAZE, 4.7K OHM 1/10 W 5% 1
R912	72795382	0RJ1001D677	METAL GLAZE, 1K OHM 1/10 W 5% 160
R914	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R919	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R920	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R921	72795346	0RH4702D622	METAL GLAZE, 47K OHM 1 / 10 W 201
R952	72795395	0RJ4703D677	METAL GLAZE, 470K OHM 1/10 W 5% 1
R954	72795390	0RJ2202D677	METAL GLAZE, 22K OHM 1/10 W 5% 16
R955	72795390	0RJ2202D677	METAL GLAZE, 22K OHM 1/10 W 5% 16
R1000	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R1002	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R1003	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R1005	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R1100	72795381	0RJ1000H680	METAL GLAZE, 100 OHM 1/2 W 5% 502
R1102	72795365	0RH1003D622	METAL GLAZE, 100K OHM 1 / 10 W 20
R1103	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R1105	72795347	0RH4703D622	METAL GLAZE, 470K OHM 1 / 10 W 20
R1108	72796205	0RH1002D422	METAL GLAZE, 10K OHM 1/10 W 1% 20
R1109	72795403	0RH1201D622	METAL GLAZE, 1.2K OHM 1 / 10 W 20
R1110	72795369	0RH1502D622	METAL GLAZE, 15K OHM 1 / 10 W 201
R1111	72795398	0RJ6801D477	METAL GLAZE, 6.8K OHM 1/10 W 1% 1
R1112	72795397	0RJ5601D477	METAL GLAZE, 5.6K OHM 1/10 W 1% 1
R1114	72795352	0RH7501D622	METAL GLAZE, 7.5K OHM 1 / 10 W 20
R1115	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R1117	72795389	0RJ2202D477	METAL GLAZE, 22K OHM 1/10 W 1% 16
R1118	72795400	0RJ9311D477	METAL GLAZE, 9.31K OHM 1/10 W 1%
R1300	72795362	0RH1000D622	METAL GLAZE, 100 OHM 1 / 10 W 201
R1303	72795364	0RH1002D622	METAL GLAZE, 10K OHM 1 / 10 W 201
R1304	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R1305	72795363	0RH1001D622	METAL GLAZE, 1K OHM 1 / 10 W 2012
R1306	72795345	0RH4701D622	METAL GLAZE, 4.7K OHM 1 / 10 W 20
R1309	72795359	0RH0000D622	METAL GLAZE, 0 OHM 1 / 10 W 2012
R1500	72795381	0RJ1000H680	METAL GLAZE, 100 OHM 1/2 W 5% 502
R1502	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R1505	72795347	0RH4703D622	METAL GLAZE, 470K OHM 1 / 10 W 20
R1507	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R1508	72795348	0RH5101D622	METAL GLAZE, 5.1K OHM 1 / 10 W 20
R1510	72795361	0RH0752D622	METAL GLAZE, 75 OHM 1 / 10 W 2012
R2000	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
R2004	72795373	0RJ0000D677	METAL GLAZE, 0 OHM 1/10 W 5% 1608
R2006	72795384	0RJ1002D677	METAL GLAZE, 10K OHM 1/10 W 5% 16
R2008	72795380	0RJ1000D677	METAL GLAZE, 100 OHM 1/10 W 5% 16
<b>COIL &amp; TRANSFORMERS</b>			
L3	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L5	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L53	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L71	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L73	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L74	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L76	72795275	0LC1032101A	INDUCTOR, CHIP, 10UH 10% 3216 R/TC F
L81	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L84	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L86	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L100	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L101	72795278	0LC2232101A	INDUCTOR, CHIP, 22UH 10% 3216 R/TC F
L102	72795274	0LC1020101A	INDUCTOR, CHIP, 1UH 10% 2012 R/TC FI
L150	72781915	0RH0101D622	METAL GLAZE, 1 OHM 1 / 10 W 2012
L151	72781915	0RH0101D622	METAL GLAZE, 1 OHM 1 / 10 W 2012
L171	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L173	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L200	72795275	0LC1032101A	INDUCTOR, CHIP, 10UH 10% 3216 R/TC F
L201	72795275	0LC1032101A	INDUCTOR, CHIP, 10UH 10% 3216 R/TC F
L213	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L214	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L300	72795275	0LC1032101A	INDUCTOR, CHIP, 10UH 10% 3216 R/TC F

Location No.	Parts No.	Reference	Description
L307	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L400	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L401	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L500	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L603	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L902	72796139	6140VR0008A	COIL, ENERGY RECOVERY, SLF12575T-330M4R7 3
L913	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L950	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L954	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L1001	72795246	6210TCE001A	FERRITECORE, BEAD, HB-1S2012-080JT CERA
L1002	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1008	72795202	6140VR0008B	COIL, ENERGY RECOVERY, SLF12575T-150M3R2 1
L1013	72795202	6140VR0008B	COIL, ENERGY RECOVERY, SLF12575T-150M3R2 1
L1100	72795180	0CK106EF56A	CERAMIC, 10UF 3216 16V 10% X7
L1101	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1102	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1103	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1104	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1105	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1106	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1107	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1108	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1115	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
L1505	72795276	0LC2000005D	INDUCTOR, CHIP, F1-B2012-332KJT, 3.3
L2000	72795215	6210TCE001G	FILTER, EMI, HH-1M3216-501 CERATE
<b>SEMICONDUCTORS</b>			
Q56	72795445	0TR150400BA	TRANSISTOR, CHIP 2SA1504S(ASY) B
Q57	72795446	0TR387500AA	TRANSISTOR, CHIP 2SC3875S(ALY) B
Q100	72795447	0TR388109AA	TRANSISTOR, KTC3881 CHIP TP KEC
Q201	72795445	0TR150400BA	TRANSISTOR, CHIP 2SA1504S(ASY) B
Q202	72795446	0TR387500AA	TRANSISTOR, CHIP 2SC3875S(ALY) B
Q203	72795445	0TR150400BA	TRANSISTOR, CHIP 2SA1504S(ASY) B
Q300	72795446	0TR387500AA	TRANSISTOR, CHIP 2SC3875S(ALY) B
Q905	72795448	0TFIR80017B	TRANSISTOR, FET, IRLML5203TRPBF, LF IN
Q1000	72795446	0TR387500AA	TRANSISTOR, CHIP 2SC3875S(ALY) B
D100	72796157	0DZ330009DF	DIODE, ZENER, MTZJ33B TP ROHM-K DO
D101	72795239	0DS181009AA	DIODE, KDS181 TP KEC SOT-2
D150	72796155	0DD184009AA	DIODE, CHIP KDS184-T1(B3) K
D301	72795242	0DVTB00048A	DIODE, VARICAP, 1SV324E, LF TOSHIBA R
D1000	72795238	0DR340009AA	DIODE, MBRS340 TP FAIRCHILD
D1101	72795238	0DR340009AA	DIODE, MBRS340 TP FAIRCHILD
LED3001	72795283	0DLBE0138AA	DIODE, LED, BRIGHT DIODE, LED, ELECTRONI
ZD1102	72795243	0DZ510009EE	DIODE, ZENER, UDZ S 5.1B TP ROHM-K
IC150	72795256	0IMMRSG036A	IC, M24C02-WMN6T(P), LF S
IC200	72796164	0IPRPMN003H	IC, VCT49X3F-F2-100, LF M
IC201	72796158	0IMCRAL006C	IC, AT24C16AN-10SU-2.7, L
IC202	72795253	0IKE702700D	IC, KIA7027AF 3, SOT-89
IC203	72795260	0IMI623200B	IC, M62320FP, I/O EXPANDE
IC204	72796169	0IMCRFA021A	IC, 74VHCU04MX FAIRCHILD
IC300	72795264	0IPRPTO022A	IC, TC90A65FG, LF TOSHIBA
IC400	72796162	0IPRPM3002D	IC, MST9883C-LF-110 MSTA
IC450	72796161	0IMCRGN002E	IC, FLI2300CF-LF GENESIS
IC451	72796160	0IMMRHY033B	IC, HY57V643220DTP-6, LF
IC500	72796158	0IMCRAL006C	IC, AT24C16AN-10SU-2.7, L
IC501	72795262	0IPRPGN015C	IC, GM2221-BC-LF, PB FREE
IC550	72781872	0IZZTSA080C	IC, HIBA23 NTSC SCALER ATMEL SOIC 32PPIN FLASH MEMORY STICK .
IC600	72796166	0IPRPS5006A	IC, SIL9021CTU(PB FREE)
IC650	72796165	0IPRPPH041A	IC, UDA1334BTS PHILIPS S
IC701	72795269	0IRH765700B	IC, BA7657F 24P, SOP TP I
IC900	72795261	0IPRP00522A	IC, TPA3008D2PHPRG4, LF T
IC1000	72795259	0IMCRNS007E	IC, LMS1587CS-3.3 NATION
IC1001	72795268	0IPMGSG018D	IC, LD1086DT18TR-LF SGS-
IC1100	72795265	0IMCRKE010A	IC, KIA7812AF KEC 2P DPA
IC1101	72795266	0IPMGKE044A	IC, KIA7808AF KEC 2P DPA
IC1102	72795258	0IMCRNS007B	IC, LM2941S NATIONAL SEM
IC1103	72795245	0TF492509AA	TRANSISTOR, FET, SI4925DY TP TEMIC 30
IC1104	72795257	0IMCRMZ001A	IC, MP1583DN-Z, LF MONOLI
IC1107	72796167	0IPMGK2001C	IC, AIC1117A-25CYTR(BS25
IC1108	72795268	0IPMGSG018D	IC, LD1086DT18TR-LF SGS-
IC1111	72795265	0IMCRKE010A	IC, KIA7812AF KEC 2P DPA
IC2000	72795270	0ISTL00026A	IC, MC14066BDR2G, LF ON S

Location No.	Parts No.	Reference	Description
<b>MISCELLANEOUS</b>			
AR1	72796195	0RHZTCZ001D	RCA SMART 22OHM 1/16
AR400	72796196	0RHZTCZ001E	RCA SMART 47OHM 1/16
PA1300	72795333	6726TV0001A	REMOCON RECEIVER, TSOP4838SO1 VISHAY 3
SW01	72795435	140-313B	SWITCH, TACT, TACT 2LEAD 160G(TA) LG C&D NON 5V 0.001A HORIZON
X200	72795406	6202VDT002E	CRYSTAL, SX-1SMD SUNNY RADIAL
X300	72795404	156-A01B	CRYSTAL, HC49U SUNNY RADIAL 3
X450	72796220	6202VDT002J	CRYSTAL, SX-1 SUNNY 13.500000
X500	72795405	6202VDT002B	CRYSTAL, SX-1 SUNNY SC14.3MHZ
X600	72796219	6202TST001H	CRYSTAL, SX-1 SUNNY 27MHZ /-
Y151	72796185	6410TUW009A	POWER CORD, LP-11WLS-7CWA LONGW
Z100	72795248	6200QL3002F	SAW FILTER, X6966M EPCOS ST SIP5
<b>PC BOARD ASSEMBLIES</b>			
* 080	72796186	6871TPT326A	PC BOARD ASSY, POWER, T23HL85 POWER TOTAL
* 090	72796173	3313TN2043A	MAIN TOTAL ASSEMBLY, T23HLV85 TOSHIBA ML-
* 100	72796191	6871TSTB59A	PC BOARD ASSY, SUB, T23HLV85 DIODE, LED, & P/SW
* 130	72796188	6871TSTA75A	PC BOARD ASSY, SUB, SUB T.T ML05TA TOSHI
* 140	72796190	6871TSTB58A	PC BOARD ASSY, SUB, T23HLV85 CONTROL TOT
* 170	72796187	6871TST997F	PC BOARD ASSY, SUB, ML-05TA TOSHIBA-23 U
<b>TUNER</b>			
TU100	72795449	6700VS0003D	TUNER, TAEW-G052P LGIT MULT
<b>ACCESSORIES</b>			
A701	72796119	3890TSEA65F	CORTON BOX, T23HLV85-MA(DVD) TOS
A702	72796181	3920TKE388A	PACKING, TOSHIBA23INCH EPS TO
K902	72796193	6710T00018J	REMOCON HAND UNIT, ML051A T23HLV85 EU, 2
Y101	72796175	3828TUO242L	OWNERS MANUAL, USER ML05TA TOSHIBA
<b>CABINET PARTS</b>			
010	72796121	3091TKE036K	CABINET ASSEMBLY, T23HLV85 TOSHIBA 309
020	72796171	6304FLP283A	LCD, LC230W02-A5K4 LG PHI
030	72796113	3809TKE032B	BACK COVER ASSEMBLY, T23HLV85 3808TKE027
040	72796233	3043TKK254B	TILT SWIVEL ASSEMBLY, TOSHIBA 23W . A-CKD
050	72796147	3550TKK906B	COVER, TOSHIBA 23W BACK DOO
110	72782418	67219D0001A	DVD DECK ASSY
120	72796152	3551TKK598H	COVER ASSEMBLY, T23HLV85
150	72796232	6400GKTX01B	SPEAKER, F1527C-6428-2 K-TONE

## 7. PC BOARDS TOP & BOTTOM VIEW

## MAIN BOARD BOTTOM (FOIL) SIDE

**\*The information contained in this section subjects to model.**



# MAIN BOARD TOP (COMPONENT) SIDE

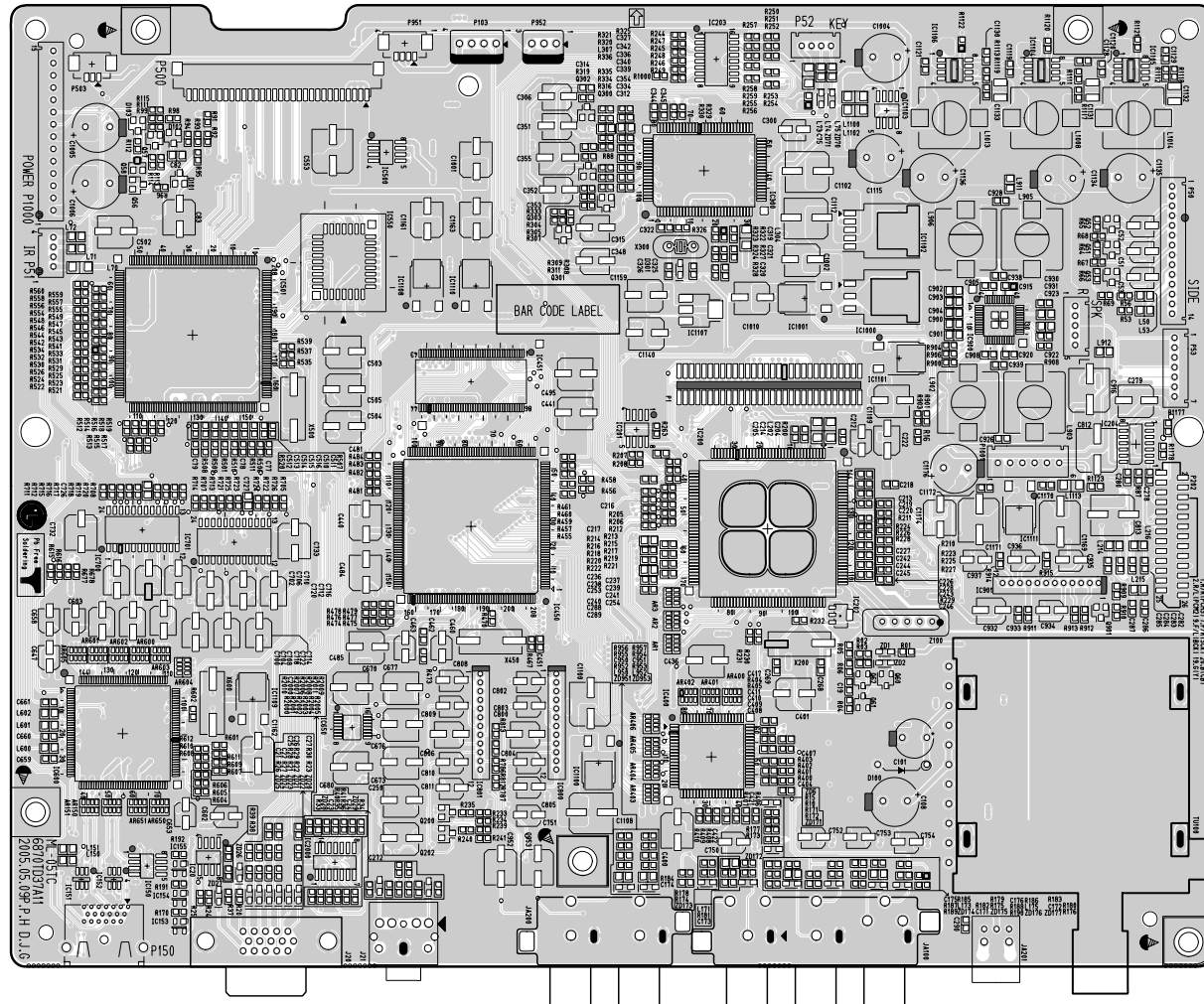


Diagram of the 16-pin connector for the 1600 Series. The connector is a single row of 16 pins. The pin numbers 1 through 16 are printed below each pin. The pins are grouped into four sets of four. The first set (pins 1-4) is labeled 'SW1' through 'SW4'. The second set (pins 5-8) is labeled 'SW5' through 'SW8'. The third set (pins 9-12) is labeled 'SW9' through 'SW12'. The fourth set (pins 13-16) is labeled 'SW13' through 'SW16'. A key is provided for the first set of pins: Pin 1 is KEY7, Pin 2 is KEY1, Pin 3 is ON, and Pin 4 is SV. The key is shown as a vertical stack of four circles, with the first circle labeled 'KEY7', the second 'KEY1', the third 'ON', and the fourth 'SV'. The key is labeled 'P1200'.

[illegible]

**TOSHIBA**

FILE NO. 050-200532

CIRCUIT DIAGRAMS

LCD Color Television

***23HLV85***



# 8. SCHEMATIC DIAGRAM

MODEL : 23HLV85

**WARNING** : BEFORE SERVICING THIS CHASSIS, READ THE "SERVICE SAFETY PRECAUTIONS" ON PAGE 3 OF THIS MANUAL.

**CAUTION** : The international hazard symbols " $\triangle$ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SERVICE SAFETY PRECAUTIONS on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

## NOTE:

- RESISTOR** Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.  
1/2R = Metal or Metal oxide of 1/2 watt      1/2S = Carbon composition of 1/2 watt  
1RF = Fuse resistor of 1 watt      10W = Cement of 10 watt  
K =  $\pm 10\%$     G =  $\pm 2\%$     F =  $\pm 1\%$
- CAPACITOR** Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in  $\mu\text{F}$ , and the values more than 1 in pF.  
All capacitors are ceramic 50V, unless otherwise noted as the following marks.  
 Electrolytic capacitor       Mylar capacitor
- The parts indicated with " $\triangle$ " have special characteristics, and should be replaced with identical parts only.
- Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 220 volts.
- Waveforms are taken receiving color bar signal with enough sensitivity.
- Voltage reading shown are nominal values and may vary  $\pm 20\%$  except H.V.

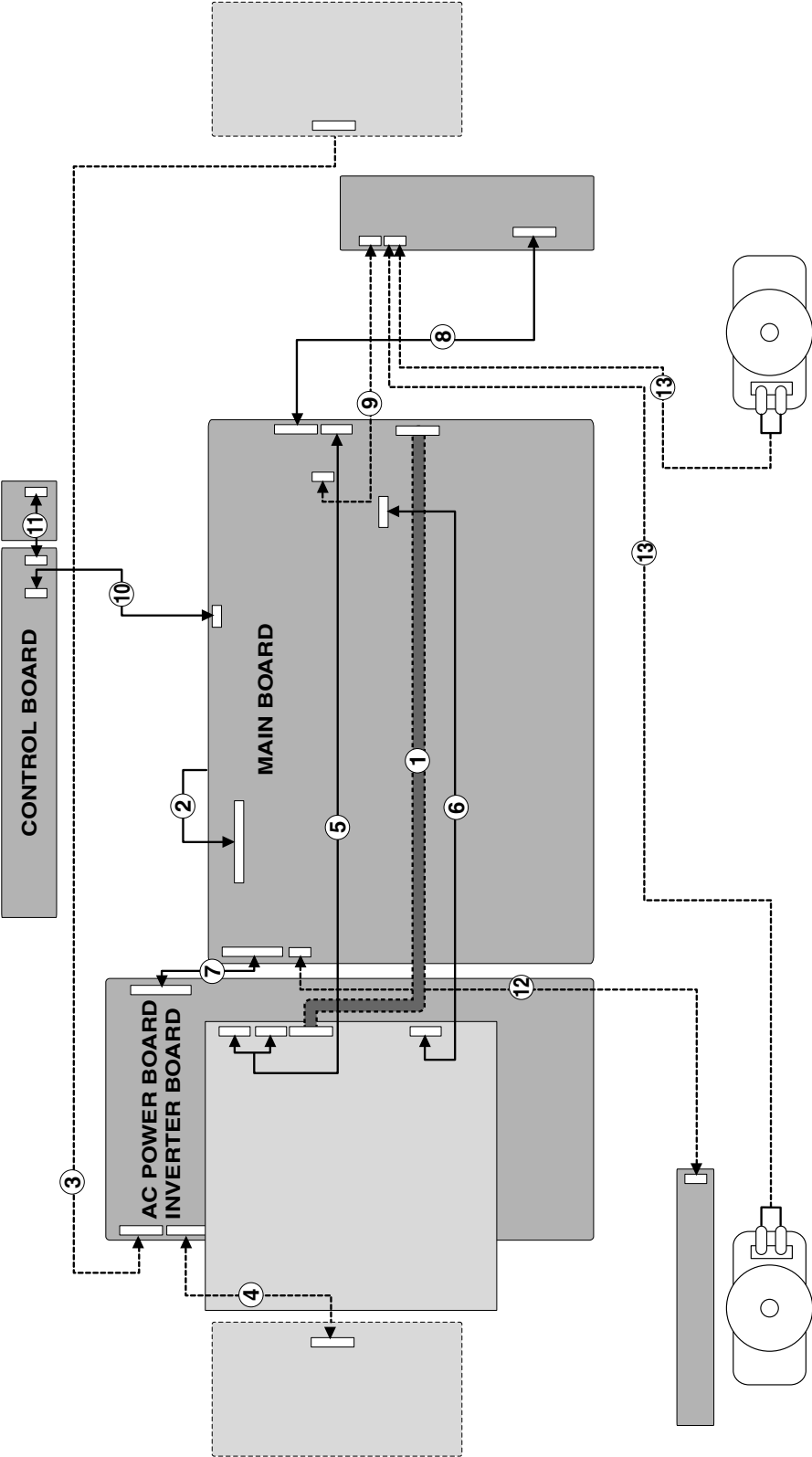
**\* The information contained in this section subjects to model.**

## ■ SCHEMATIC DIAGRAM STRUCTURE:

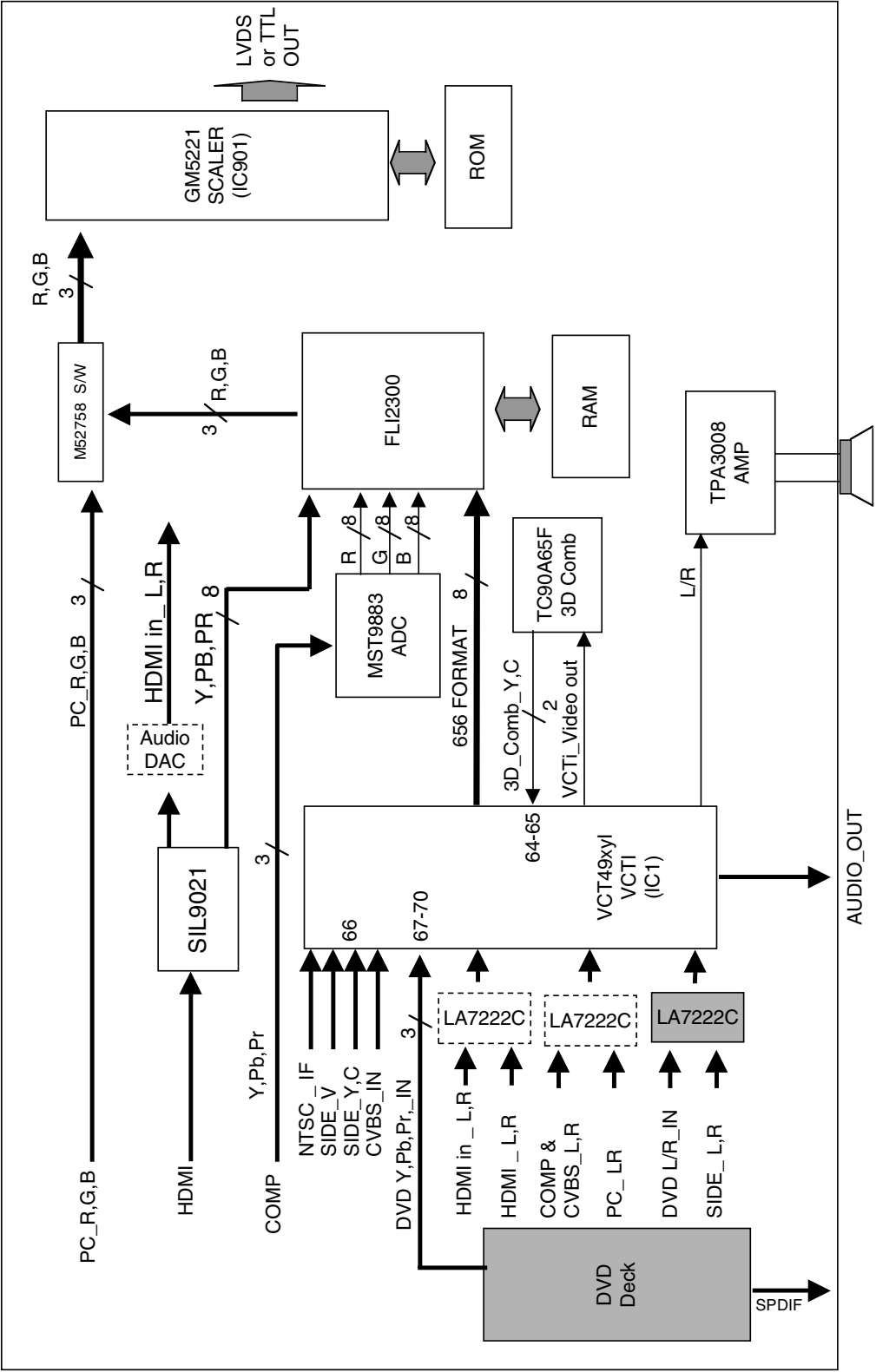
TUNER/PC .....	1/16
VCTI .....	2/16
INPUT .....	3/16
3D COMB .....	4/16
ADC (COMP) .....	5/16
SIL9021 .....	6/16
FLI2300 .....	7/16
SWITCH .....	8/16
SWITCH&BUFFER .....	9/16
AUDIO AMP .....	10/16
SCALER .....	11/16
POWER IN&INTERFACE .....	12/16
POWER .....	13/16
LED&IR .....	14/16
CONTROL&POWER .....	15/16
SIDE .....	16/16



8-1. WIRING DIAGRAM



8-2. BLOCK DIAGRAM



## 1. Video Controller Unit & Display Data Conversion Unit

The video controller unit receives the video signals inputted through the tuner, AV port (VIDEO1, VIDEO2), and converts them into an ITU656 signal through the microcomputer (VCTI) combined with the video decoder that integrates various functions in one chip.

Either the analog RGB(FLI2300) signal or PC RGB signal is selected by the switching IC and inputted to a scaler (GM2221), which is sent to the LCD module after being modified to an LVDS signal through the integrated LVDS IC.

VCTi is the main microprocessor that handles video signal processing and sound signal processing.

It also manages the RF signals received from the tuner.

The scaler can control timing to fit into the LCD panel, and can also control the size and position of the input signal.

## 2. Power Supply Unit

The power supply unit provides 5V, 15V and 33V DC power to the Mainboard.

The 33V is directly used for the tuner.

15V power is directly used by the sound amplifier IC and is also used to generate 5V and 3.3V power through the Step-Down DC/DC Converter. 5V power is converted to 3.3V and 1.8V power through the regulator, which in turn supplies electrical power for ICs such as VCTI and scaler.

<b>*The information contained in this section subjects to model.</b>
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1                      2                      3                      4                      5                      6                      7                      8



## B



## B

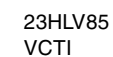


## C



## E



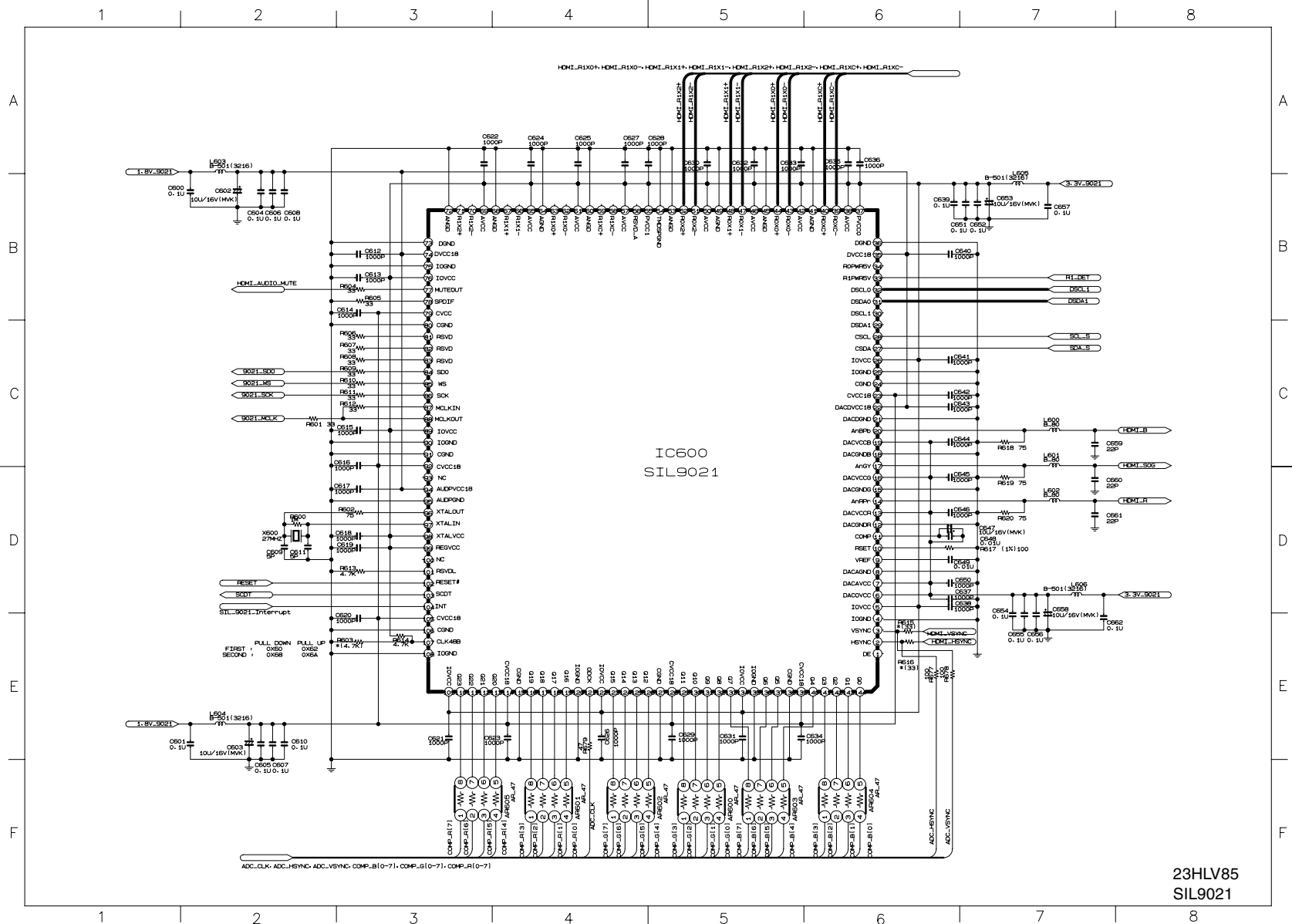


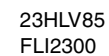






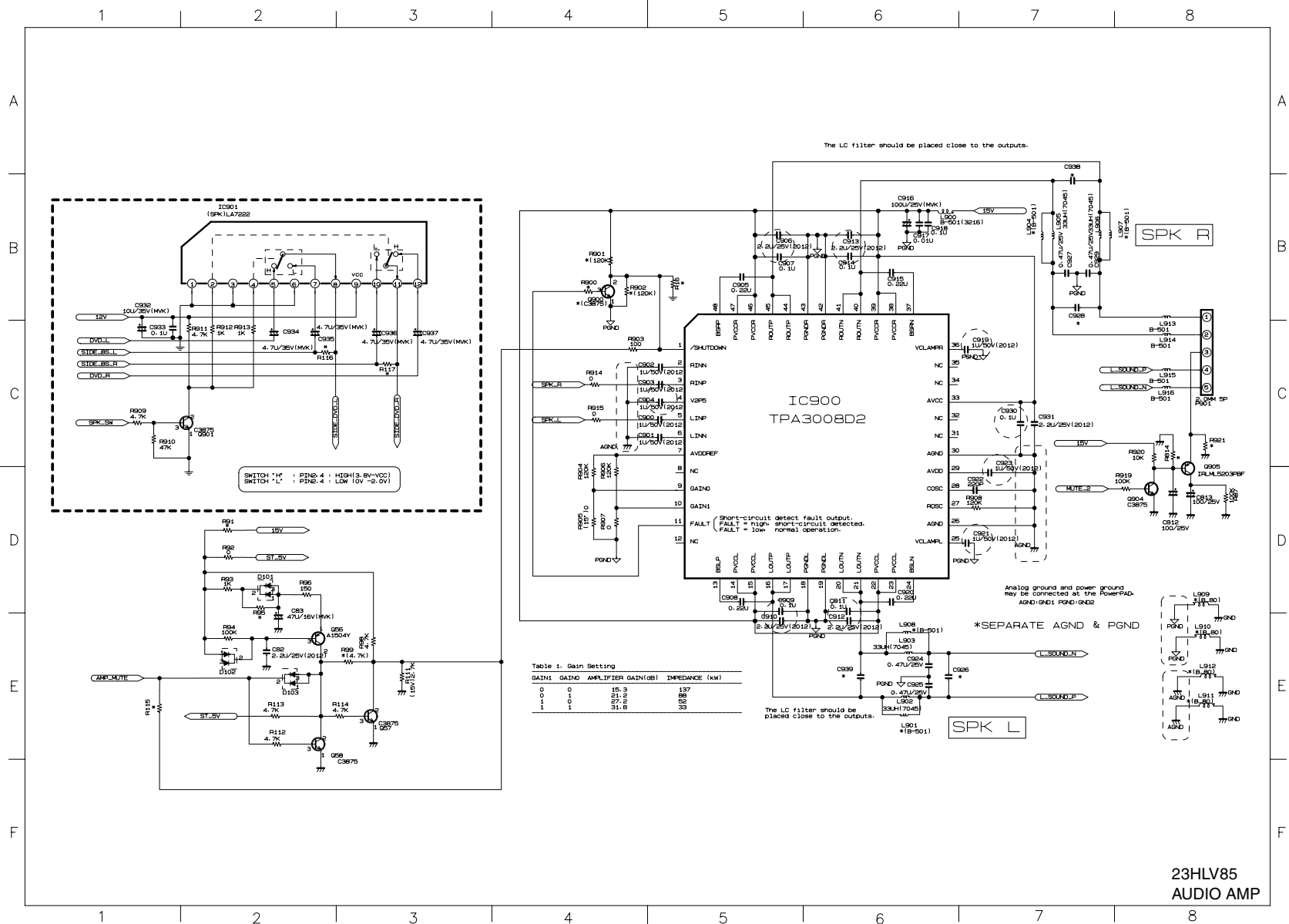






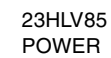






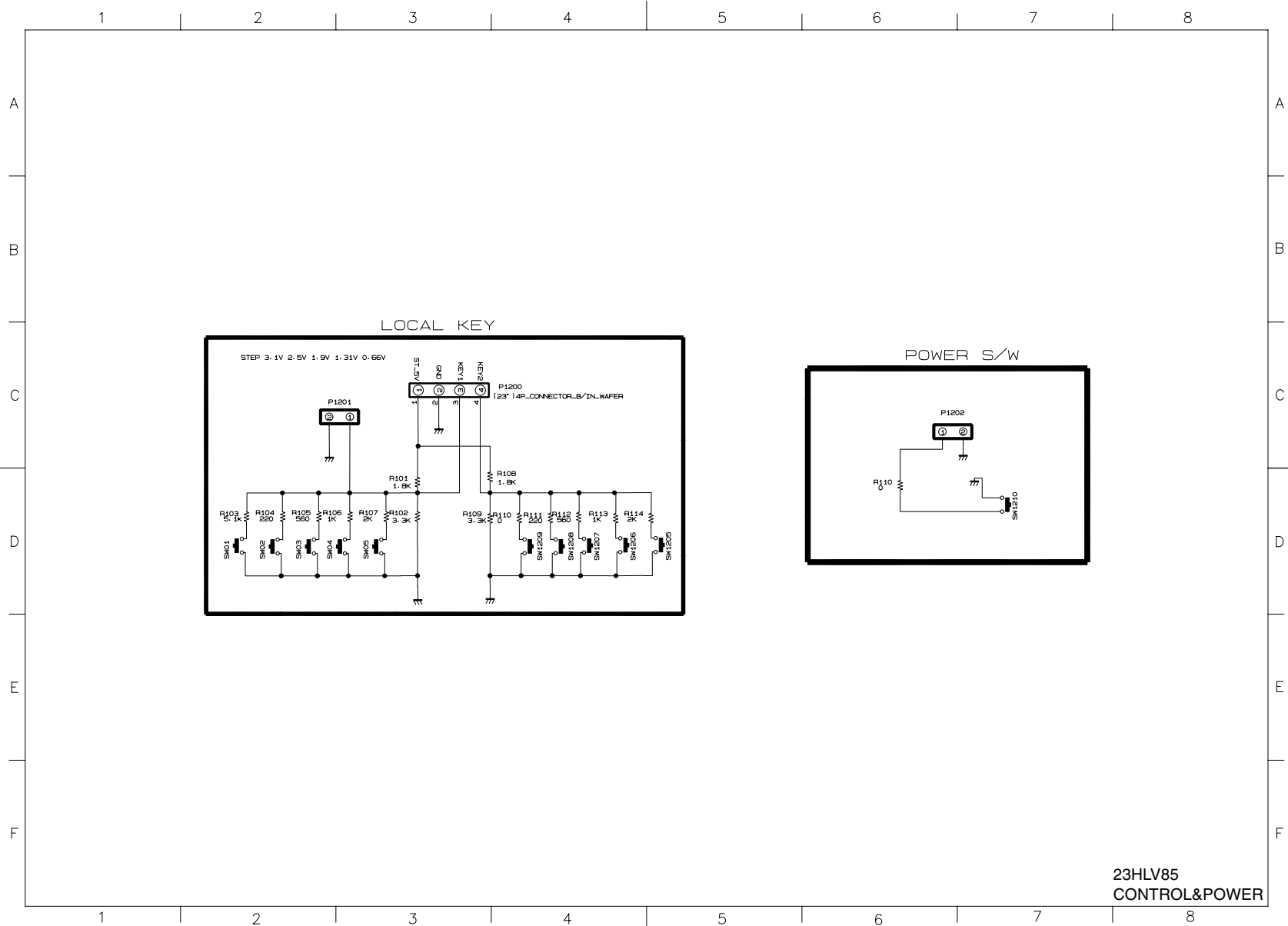














# **TOSHIBA CORPORATION**

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN